



>> **Name:** Amminetrichloroplatinate(II)(1-), 8Cl

Synonym(s): Trichloro(amine)platinate(1-)

CAS Registry Number: 17632-41-6

Related CAS Registry Numbers(s): 13820-91-2

$\text{PtCl}_3(\text{NH}_3)^{(-)}$

Molecular Formula: $\text{Cl}_3\text{H}_3\text{NPt}^{(-)}$

Molecular Weight: 318.469

Accurate Mass: 316.897871

Percentage Composition: Cl 33.40%; H 0.95%; N 4.40%; Pt 61.26%

Use/Importance: Useful synthetic intermed.

>>>**Derivative:** K salt, monohydrate

Synonym(s): Cossa's yellow salt

CAS Registry Number: 20574-25-8

Molecular Formula: $\text{Cl}_3\text{H}_5\text{KNOPt}$

Molecular Weight: 375.582

Accurate Mass: 373.872143

Percentage Composition: Cl 28.32%; H 1.34%; K 10.41%; N 3.73%; O 4.26%; Pt 51.94%

Physical Description: Yellow cryst.

Solubility: Sol. H_2O

Other Data: Cossa's red salt is a mixture of this and some $\text{K}^{(+)}[\text{PtCl}_5(\text{NH}_3)]^{(-)}$. Alleged anhydrous material is probably hydrated

>>>**Derivative:** NH_4 salt, monohydrate

CAS Registry Number: 15022-60-3

Source/Synthesis: Synth. from *cis*- $[\text{PtCl}_2(\text{NH}_3)_2]$ + conc. HCl + H_2O under reflux for 9h

Physical Description: Air-stable yellow-orange plates

Other Data: Readily loses H_2O if dried in a desiccator over SiO_2 , or in air after being washed with EtOH

>>>**Derivative:** K salt of $[\text{PtCl}_3(\text{NH}_3)]^{(-)}$ and $[\text{PtCl}_5(\text{NH}_3)]^{(-)}$

CAS Registry Number: 53881-28-0

Molecular Formula: $\text{Cl}_8\text{H}_6\text{K}_2\text{N}_2\text{Pt}_2$

Molecular Weight: 786.039

Accurate Mass: 781.66086

Percentage Composition: Cl 36.08%; H 0.77%; K 9.95%; N 3.56%; Pt 49.64%

Physical Description: Green lustrous cryst.

Other Data: Semiconductor, probably has alternating structure of stacked anions

References:

Elleman, T.S. *et al.*, *J.A.C.S.*, 1958, **80**, 536, (*synth*)

Jeannin, Y.P. *et al.*, *Inorg. Chem.*, 1970, **9**, 778, (*struct*)

Fanwick, P.E. *et al.*, *Inorg. Chem.*, 1973, **12**, 24, (*uv*)

Adams, D.M. *et al.*, *J.C.S. Dalton*, 1973, 2298, (*Raman*)

Layek, D. *et al.*, *Z. Naturforsch., B*, 1980, **35**, 112; 676, (*synth, Raman*)

Oksanen, A. *et al.*, *Acta Chem. Scand.*, 1994, **48**, 485-489, (*NH₄ salt, monohydrate, synth, cryst struct*)

Oksanen, A. *et al.*, *Inorg. Chim. Acta*, 1997, **260**, 53-60, (*K salt, monohydrate, cryst struct, synth*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, PJD750